Water Yield

Monitoring item #10 was based on a Management Area (MA) standard in the 1987 Gallatin NF Forest Plan for MA's 8, 9, 10, 11, and 13, which required use of the ECA (equivalent clearcut area) procedure to evaluate hydrologic conditions in those MA's. The Forest Plan was amended (Amendment #17, February 1993) to use the R1R4/WATSED model to evaluate the sediment effects of management activities. The ECA method was designed to estimate allowable road, disturbance, and construction activity allowed in a watershed constrained by increased runoff and stream channel scour. Subsequent analysis of several projects indicated that increased sediment potential was of concern in areas where disturbance/construction was not sufficient to cause stream channel scour. Amendment #17 then added the requirement for R1R4/WATSED sediment modeling the MA's although the modeling has been used extensively over all of the Gallatin NF. Since the ECA water yield procedure is no longer required this monitoring item is no longer reported although subsequent water yield calculations for a number of Gallatin NF projects confirm that water yield changes have always been considerably less than 10%. Water yield increase calculations during 2004-2006 were provided for the Main Boulder Fuels Reduction Project (D1), Windmill Timber Sale analysis (D2), Smith Creek Fuels Reduction Project (D2), Bozeman Municipal Watershed (D6), and Lonesome Wood Fuel Reduction Project (D7) as well as a number of BAER (fire rehab) projects.